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# Cost Effectiveness Testing 2021-2023

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NH PUC

# Cost Effectiveness Testing


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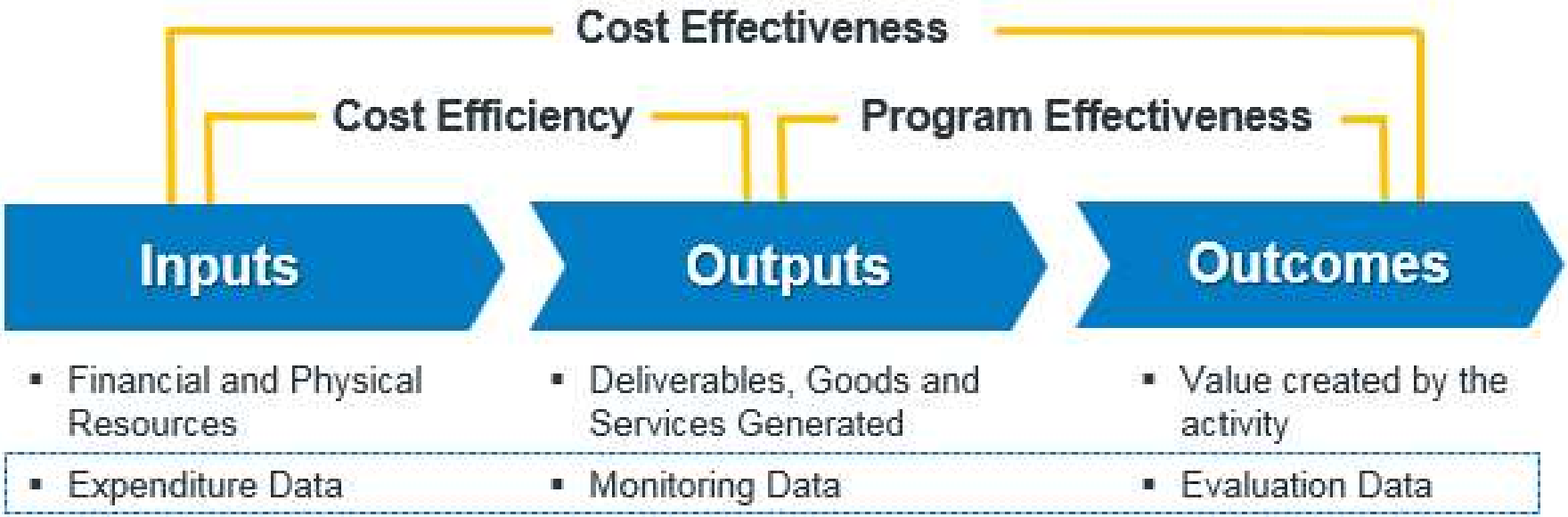
# What is Cost Effectiveness Testing?




Cost Effectiveness Testing analyzes the **cost of the inputs** required to deliver energy efficiency programs against the net present **value of outcomes** realized, in light of state policy goals.

# The New Granite State Test

- During 2019, **Synapse Energy Economics** worked with members of the PUC staff, utility representatives, and energy efficiency stakeholders to undertake a comprehensive review of State Energy Policy and PUC precedent and to update the Cost Effectiveness Test used by the NHSaves programs. The resulting Cost Effectiveness Review Final Report was completed in mid-October.

- On October 31, 2019, this **Benefit-Cost Working Group** filed a set of recommendations to the Commission regarding the adoption of the proposed primary cost-effectiveness test (the **Granite State Test**), and two secondary tests to be applied to the 2021-2023 Term.

- On December 30, 2019, the NH Public Utilities Commission issued Order 26,322, approving the Benefit-Cost Working Group's recommendations.

# The New Granite State Test

- The new **Granite State Test** measures the costs of delivering energy efficiency programs against the benefits that accrue to the utility system, *as well as those benefits* associated with:

  a) improving outcomes for low income customers
  b) reducing customers' use of unregulated fuels and water, and
  c) RGGI / carbon emissions proxy

- If the net present value of outcomes realized by the energy efficiency programs ("benefits") is greater than the cost to plan/deliver those programs ("costs"), it is assumed under the Granite State Test that the investment is sound and can proceed.

- The **Granite State Test** is applied to each Program in the Portfolio that is designed to save energy.
  - Exceptions can be made for certain offerings including Education, approved Pilot Programs, Programs in their first year(s), and Home Energy Assistance).

# The New Secondary Tests

- In addition to the **Granite State Test**, the PUC approved two secondary cost-effectiveness tests recommended by the B/C Working Group starting with the 2021-2023 Energy Efficiency Resource Standard Plan.

    1. **Utility Cost Test** (UCT)
    2. **Secondary Granite State Cost Test** (GST-2)

- The **UCT** considers the costs of delivering energy efficiency programs against only *direct* benefits to the utility system (i.e., ignoring the significant non-system benefits realized by customers).

- **GST-2** goes in the other direction, considering the costs of delivering energy efficiency programs against both *direct* and *indirect* benefits to the utility system, to customers, to the environment, to economic development, etc.

- The UCT and GST-2 will help inform resource allocation decisions, as well as treatment of marginally cost-effective programs.

# How / When GST is Applied

- The **Granite State Test** (and secondary tests) will be applied by each utility to each of their **proposed programs** at the time of filing to inform settlement discussions.

- The **Granite State Test** (and secondary tests) will also be applied by each utility to each of their **approved programs** at the time of annual / term reporting.

  *As long as the **Portfolio of Programs** delivered during a given year / term was cost effective (with a B/C ratio > 1.0), the utility will be eligible to earn a performance incentive.*

- The secondary tests (UCT and GST-2) will have no impact on the utility's performance incentive.

# Costs are Obvious, What About Benefits?

- **Benefits** are derived from the Avoided Energy Supply Components ("AESC") Study undertaken every three years for the entire New England region.

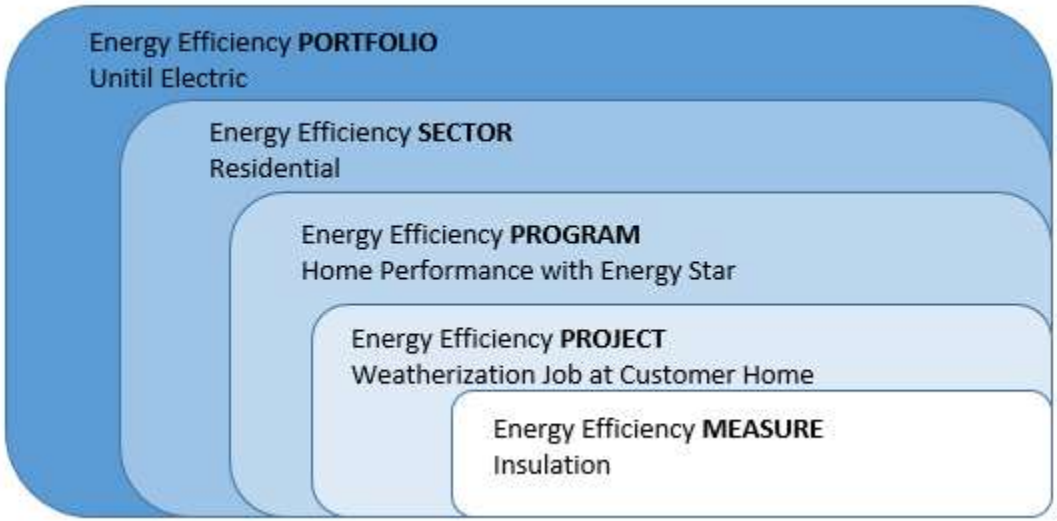
- The **AESC Study** generates state-specific models of the value of avoided energy and capacity (kWh in each of four seasonal periods, kW at summer and winter peak, and natural gas, oil, propane, kerosene, cord wood, and wood pellets).

- These avoided energy values are projected out over a 25-year time horizon; state-specific **inflation and discount rates** are applied in the utilities' Benefit-Cost Model to arrive at a calculation of net-present-value ("NPV") Benefits.

- The **NPV Benefits** of a given project depend on various project-specific factors, including measure life, load-shape, the coincidence of its use with summer and winter electric system peak, and the fuel that is reduced. As a result, the value (or benefit) of an avoided annual kWh varies by measure and by project.

# B/C Ratio and Where it's Applied

- Because the Granite State Test requires that the Utilities plan for each Program to be cost effective, **Measures** and **Projects** that make up the **Program** must also be cost effective.
- In fact, the **Measures** & **Projects** that make up a **Program** have to on average be *more cost-effective* than 1.0 so that their benefits exceed the costs not only of rebates & services provided to customers but of all program-related marketing, EM&V, admin and other non-energy saving costs as well.




- So, not every individual Measure or Project *has to be* cost effective, but it's important to ensure the vast majority of them are so the utility can meet the Net Benefits goal *and deliver net value* to each Customer it serves.

# B/C Ratio and Where it's Applied

Different **Programs** and use different tools to determine whether a project is cost effective:

- **C&I New** and **Retrofit** projects are either *prescriptive* or *custom.*
  - *Prescriptive* projects (where the rebate and savings calculations are standardized) are typically found to be cost effective through previous evaluation, and will be documented in the 2021-2023 *Technical Reference Manual* ("TRM").
  - *Custom* projects are determined to be cost effective on a case by case basis and are reviewed by an engineer and/or run through a field screening tool based on the utilities' approved Benefit-Cost model.

# B/C Ratio and Where it's Applied

- **Residential** measures and projects use a combination of prescriptive and modeled savings depending on Program design.

  **Energy Star Appliances measures** (lighting, air conditioners, heat pumps, dryers) are found to be cost effective through previous evaluation, and will be documented in the 2021-2023 *Technical Reference Manual* ("TRM").

  **Home Energy Assistance** and **Home Performance with Energy Star** use third-party weatherization modeling software to estimate energy savings.
  - TREAT generates a Savings to Investment Ratio for the HEA Program based on the needs of the Federal WAP program, which is similar to the B/C ratio
  - Surveyor produces an estimated B/C ratio for the HPwES programs.
  - The process of estimating cost effectiveness will be improved with modeling software improvements that will be operational during the 2021-2023 term.

# B/C Ratio and Where it's Applied

The **Granite State Test** will be applied beginning in 2021

- Only the utility's costs will be included, *not customer costs.*
- This will make it easier for non-low income Residential and C&I projects to screen as cost-effective

$$\frac{\text{Benefits (w/NEIs)}}{\text{Utility Costs + Customer Costs}} < \frac{\text{Benefits (w/out NEIs)}}{\text{Utility Costs}}$$

- The **Home Energy Assistance** (Low Income) **Program** has never required any contribution from the customer; the utility covers 100% of the cost.
- Moving to the **Granite State Test** will not have any impact on how jobs are screened or paid for in Home Energy Assistance. However…
  - Calculating cost-effectiveness at the **Portfolio** level for Performance Incentive purposes will allow greater flexibility in pursuing measures and projects that are not cost-effective.
  - Removing customer benefits and costs from the Cost Test will increase cost-effectiveness portfolio-wide (all else being equal).

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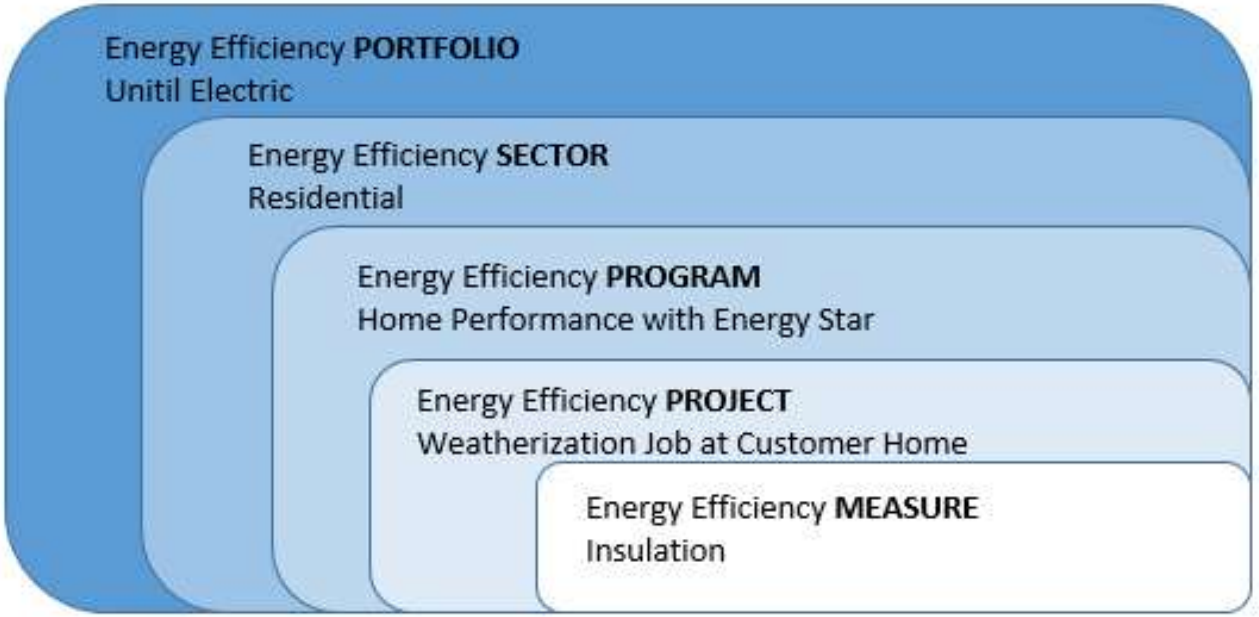


## To Recap:

- Under the new **Granite State Test**, each Utility will propose cost-effective **Programs** when their Plan is filed (with possible exceptions for income-eligible, education, pilots or programs in their first year).
- To plan for cost-effective Programs, each Utility has to plan for (most) **Measures** and **Projects** to be cost-effective.
- To earn Performance Incentive, each Utility must achieve 75% of the **Portfolio** Net Benefits in their Plan, and be cost-effective, overall.

# Questions & Answers